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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/327,282	06/04/1999	YUN CHEOL JEONG	8733D.6984	5275

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EXAMINER	
NGUYEN, KEVIN M	

ART UNIT	PAPER NUMBER
2674	38

DATE MAILED: 03/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/327,282	JEONG ET AL.	
	Examiner	Art Unit	
	Kevin M. Nguyen	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-6 and 13-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-6 and 13-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/28/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

SUPPLEMENTAL ACTION

During interview with Applicant's representative on 03/04/2004, the finality of that action is withdrawn because of new ground of the rejections. The remarks filed on 01/07/2004 has been fully considered but they are not persuasive. The rejections of claims 3-6 and 13-35 are maintained.

Information Disclosure Statement

1. The information disclosure statement filed 5/14/2001 and 7/19/2001 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 3, 4, 16-21 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Shiraki et al (US 6,504,522).

4. As to claims 3, 4 and 31, Shiraki et al teach a method of driving a matrix liquid crystal panel provided with a plurality of thin film transistors coupled to scanning wires

GL1, GL2, GL3 and signal wires SL1, SL2, SL3, a plurality of liquid crystal cells CL, at intersecting points 10 of the scanning wires GL1, GL2, GL3 and the signal wires SL1, SL2, SL3, the method comprising steps of (see figures 2 and 3): applying a scanning signal voltages GL1, GL2, GL3; and supplying data signal voltages SL1, SL2, SL3 having a width enlarged (t1<t2<t3) in accordance with a distance from a source of the scanning signal to the signal wires GL1, GL2, GL3 (see figure 7, column 16, lines 60-67).

5. As to claims 16-18, Shiraki et al teach an apparatus for driving a matrix type liquid crystal panel provided with a plurality of thin film transistors coupled to scanning wires GL1, GL2, GL3 and signal wires SL1, SL2, SL3, a plurality of liquid crystal cells CL, at intersecting points 10 of the scanning wires GL1, GL2, GL3 and the signal wires SL1, SL2, SL3, the apparatus comprising: a scanning driver (3); a data driver (2) for supplying data signal voltages SL1, SL2, SL3 having a width enlarged (t1<t2<t3) in accordance with a distance from a source of the scanning signal to the signal wires GL1, GL2, GL3 (see figure 7, column 16, lines 60-67).

6. As to claims 19-21, Shiraki et al teach an apparatus for driving a matrix type liquid crystal panel provided with a plurality of thin film transistors coupled to scanning wires GL1, GL2, GL3 and signal wires SL1, SL2, SL3, a plurality of liquid crystal cells CL, at intersecting points 10 of the scanning wires GL1, GL2, GL3 and the signal wires SL1, SL2, SL3, the apparatus comprising: a scanning driver (3); a data driver (2); width control means (see figure 5) for making data signal voltages SL1, SL2, SL3 to be supplied to the signal wires have a different width (t1<t2<t3) in accordance with a

distance from a source on the scanning signal to the signal wires GL1, GL2, GL3 (see figure 7, column 16, lines 60-67).

7. Claims 5, 32, 33 and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsuura et al (US 6,175,351).

As to claims 5 and 32, Matsuura teaches a method for driving a matrix type liquid crystal panel provided with a plurality of thin film transistors 3 coupled to scanning wires 6 and signal wires 5, a plurality of liquid crystal cells Cp, at intersecting points of the scanning wires 6 and the signal wires 5 (figure 24), the apparatus comprising: applying data signal voltage (60); and supplying a scanning signal voltage having a width enlarged (t1<t2<t3) in accordance with a distance from a source of the signal wires (see figure 14, column 23, lines 9-21).

As to claim 33, Matsuura teaches a method for driving a matrix type liquid crystal panel provided with a plurality of thin film transistors 3 coupled to scanning wires 6 and signal wires 5, a plurality of liquid crystal cells Cp, at intersecting points of the scanning wires 6 and the signal wires 5 (figure 24), the apparatus comprising: applying data signal voltage (60); and supplying a scanning signal voltage having a width enlarged (t1<t2<t3) in accordance with a distance from a source of the signal wires (see figure 14, column 23, lines 9-21); and a width expander (82) is utilized for controlling the width of the scanning signal voltage (see figure 12).

As to claims 13-15, Matsuura teaches an apparatus for driving a matrix type liquid crystal panel provided with a plurality of thin film transistors 3 coupled to scanning wires 6 and signal wires 5, a plurality of liquid crystal cells Cp, at intersecting points of

the scanning wires 6 and the signal wires 5 (figure 24), the apparatus comprising: scanning side driving means 70; signal side driving means (60); width control means 82 for allowing the scanning signal voltage having a different width (t1<t2<t3) in accordance with a distance from a source of the signal wire (see figure 14, column 23, lines 9-21).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 23, 24 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraki et al in view of Lee (US 6,064,459).

As to claims 23 and 24, Shiraki et al teach all of the claimed limitations, except for "a plurality of scanning driver integrated circuit, a plurality of data driver integrated circuits." However, Lee reviews TFT-LCD having a plurality of data line driver integrated circuit packages 40, and plurality of gate driver IC package 60 (see figure 1, col. 1, lines 23-28). It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize a plurality of gate driver IC and a plurality of data driver IC taught by Lee for the TFT-LCD driver circuit system disclosed by Shiraki et al because this would provide less image distortion due to cross talk between elements of the display (see col. 2, lines 35-36 of Lee).

As to claims 27-30, Shiraki et al teach all of the claimed limitations, except for "a plurality of scanning driver integrated circuit, a plurality of data driver integrated circuits." However, Lee reviews TFT-LCD having a plurality of data line driver integrated circuit packages 40, and plurality of gate driver IC package 60 (see figure 1, col. 1, lines 23-28). It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize a plurality of gate driver IC and a plurality of data driver IC taught by Lee for the TFT-LCD's driver circuit system disclosed by Shiraki et al because this would provide less image distortion due to cross talk between elements of the display (see col. 2, lines 35-36 of Lee).

10. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura et al in view of Lee.

As to claims 25 and 26, Matsuura teach all of the claimed limitations, except for "a plurality of scanning driver integrated circuit, a plurality of data driver integrated circuits." However, Lee reviews a TFT-LCD having a plurality of data line driver integrated circuit packages 40, and plurality of gate driver IC package 60 (see figure 1, col. 1, lines 23-28). It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize a plurality of gate driver IC and a plurality of data driver IC taught by Lee for the TFT-LCD driver circuit system disclosed by Shiraki et al because this would provide less image distortion due to cross talk between elements of the display (see col. 2, lines 35-36 of Lee).

11. Claims 6, 22, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraki et al in view of Matsuura et al.

As to claims 6, 22, 34 and 35, Shiraki et al teaches an apparatus associated with a method, the apparatus comprising: outputting data signal voltages SL1, SL2, SL3 (fig. 7) from a source driver 2 (fig. 2, a source driver details in fig. 5) having a width enlarged (t1<t2<t3, fig. 7) in accordance with a distance from a gate driver 3 (fig. 2) of the scanning signal to the signal wires GL1, GL2, GL3 (fig. 7, column 16, lines 60-67).

Shiraki does not teach supplying scanning voltage having a width enlarged in accordance with a position of the signal wire relative to the scanning wire.

Matsuura teaches outputting the scanning signal voltages (P1, P2, P3, fig. 14) having a width enlarged (t1<t2<t3, fig. 14) in accordance with a distance from a data driver (60, fig. 12) of the signal wires (see figure 12, column 23, lines 9-21).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to provide outputting the scanning signal voltages (P1, P2, P3, fig. 14) having a width enlarged (t1<t2<t3, fig. 14) in accordance with a distance from a data driver (60, fig. 12) of the signal wires taught by Matsuura et al to Shiraki's row driver because this would minimize the variation in luminance and the flickering, prevent in brightness due to the reduction of the effective display time, and thus the display quality is significantly improved (see col. 23, lines 26-30 of Matsuura et al).

Response to Arguments

12. Applicant's arguments filed 01/07/2004 have been fully considered but they are not persuasive.

13. In response to applicant's argument that claims 3, 4, 16, 19, 31 recite "supplying data signal voltages having a width enlarged in accordance with a distance from a source of the scanning signal to the signal wires."

This argument is not persuasive because Shiraki's invention teaches outputting data signal voltages SL1, SL2, SL3 (fig. 7) from a source driver 2 (fig. 2, a source driver details in fig. 5) having a width enlarged (t1<t2<t3, fig. 7) in accordance with a distance from a gate driver 3 (fig. 2) of the scanning signal to the signal wires GL1, GL2, GL3 (fig. 7, column 16, lines 60-67).

These arguments are not persuasive because Shiraki teaches the data signal voltages SL1 (fig. 7) from a source driver 2 (fig. 2, a source driver details in fig. 5) having a width enlarged (t1, fig. 7) in accordance with a distance from a gate driver 3 (fig. 2) of the scanning signal to the signal wires GL1 (fig. 7, column 16, lines 60-67).

Similarly, Shiraki teaches the data signal voltages SL2 (fig. 7) from a source driver 2 (fig. 2, a source driver details in fig. 5) having a width enlarged (t2, fig. 7) in accordance with a distance from a gate driver 3 (fig. 2) of the scanning signal to the signal wires GL2 (fig. 7, column 16, lines 60-67).

Similarly, Shiraki teaches the data signal voltages SL3 (fig. 7) from a source driver 2 (fig. 2, a source driver details in fig. 5) having a width enlarged (t3, fig. 7) in accordance with a distance from a gate driver 3 (fig. 2) of the scanning signal to the signal wires GL3 (fig. 7, column 16, lines 60-67).

14. In response to applicant's argument that claims 5, 13, 32, 33 recite "supplying a scanning signal voltage having a width enlarged in accordance with a distance from a source of the signal to the scanning wire."

This argument is not persuasive because Matsuura's invention teaches outputting the scanning signal voltages (P1, P2, P3, fig. 14) having a width enlarged (t1<t2<t3, fig. 14) in accordance with a distance from a data driver (60, fig. 12) of the signal wires (see figure 12, column 23, lines 9-21).

These arguments are not persuasive because Matsuura teaches the scanning signal voltages (P1, fig. 14) having a width enlarged (t1, fig. 14) in accordance with a distance from a data driver (60, fig. 12) of the signal wires (see figure 12, column 23, lines 9-21).

Similarly, Matsuura teaches the scanning signal voltages (P2, fig. 14) having a width enlarged (t2, fig. 14) in accordance with a distance from a data driver (60, fig. 12) of the signal wires (see figure 12, column 23, lines 9-21).

Similarly, Matsuura teaches the scanning signal voltages (P3, fig. 14) having a width enlarged (t3, fig. 14) in accordance with a distance from a data driver (60, fig. 12) of the signal wires (see figure 12, column 23, lines 9-21).

15. In response to applicant's argument that claims 6, 22, 34 and 35 recite "supplying data signal voltages having a width enlarged in accordance with a distance from a source of the scanning signal to the signal wires, and supplying a scanning signal voltage having a width enlarged in accordance with a distance from a source of the signal to the scanning wire."

This argument is not persuasive because Shiraki's invention teaches outputting data signal voltages SL1, SL2, SL3 (fig. 7) from a source driver 2 (fig. 2, a source driver details in fig. 5) having a width enlarged (t1<t2<t3, fig. 7) in accordance with a distance from a gate driver 3 (fig. 2) of the scanning signal to the signal wires GL1, GL2, GL3 (fig. 7, column 16, lines 60-67). Matsuura's invention teaches outputting the scanning signal voltages (P1, P2, P3, fig. 14) having a width enlarged (t1<t2<t3, fig. 14) in accordance with a distance from a data driver (60, fig. 12) of the signal wires (see figure 12, column 23, lines 9-21).

16. In response to applicant's argument that claims 23, 27 and 29 recite "a width controller for varying widths of time periods during which the data signals are applied by the data driver integrated circuits to the data lines in accordance with the data lines' respective positions relative to a scanning line source." This argument is not persuasive because Shiraki's invention teaches a width controller for outputting data signal voltages SL1, SL2, SL3 (fig. 7) from a source driver 2 (fig. 2, a source driver details in fig. 5) having a width enlarged (t1<t2<t3, fig. 7) in accordance with a distance from a gate driver 3 (fig. 2) of the scanning signal to the signal wires GL1, GL2, GL3 (fig. 7, column 16, lines 60-67). Lee reviews TFT-LCD having a plurality of data line driver integrated circuit packages 40, and plurality of gate driver IC package 60 (see figure 1, col. 1, lines 23-28).

17. In response to applicant's argument that there is no suggestion to combine the references (page 20, lines 10-18), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the

claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, this argument is persuasive because it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify a plurality of gate driver IC and a plurality of data driver IC reviewed by Lee for Shiraki's column and row driver circuits are well known and expected in the art because this is known to provide less image distortion due to cross talk between elements of the display (see col. 2, lines 35-36 of Lee).

18. In response to applicant's argument that claims 25 and 26 recite "a plurality of scanning driver integrated circuits, a plurality of data driver integrated circuits, a controller for varying widths of time periods during which the scanning signals are applied by the scanning driver integrated circuits to the scanning lines in accordance with the scanning lines' respective positions relative to a data line source." This argument is not persuasive because Matsuura teaches a controller for the scanning signal voltages (P1, fig. 14) having a width enlarged (t1, fig. 14) in accordance with a distance from a data driver (60, fig. 12) of the signal wires (see figure 12, column 23, lines 9-21). Lee reviews TFT-LCD having a plurality of data line driver integrated circuit packages 40, and plurality of gate driver IC package 60 (see figure 1, col. 1, lines 23-28).

For these reasons, the rejections based on Shiraki et al, Matsuura et al, and Lee have been maintained.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kevin M. Nguyen** whose telephone number is **703-305-6209**. The examiner can normally be reached on MON-THU from 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reached on **703-305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Kevin M. Nguyen
Patent Examiner
Art Unit 2674

XIAO WU
PRIMARY EXAMINER